



## SITE CONDITION REPORT

Romford North

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## **EXECUTIVE SUMMARY**

Infinity (ISDC Developments (No.2) Ltd.) commissioned Hurleypalmerflatt to undertake an application for an Environmental Permit as required under the “Environmental Permitting Regulations (EPR) (England and Wales) 2010 (as amended)”.

As part of this we have prepared this report, which summarises the information sources necessary to assess the baseline condition of the site. The aim of this report is to establish the baseline site condition and to identify whether the target site potentially has any significant environmental liabilities which could incur a liability for future remediation/ clean-up costs in operation or on surrender of the site licence.

We undertook site visits on 17<sup>th</sup> July 2013 and the desk top investigations were conducted in September 2013.

## **SUMMARY OF BASELINE SITE CONDITION**

### **Site Location:**

Romford North Data Centre: RM7 7PN  
National Grid Reference: TQ 50290 89820

### **Site Details:**

The site is located adjacent to Hubbinet Industrial Estate in Romford. The site is surrounded by residential properties adjacent to the east and north and by commercial/industrial properties to the south and west. The River Rom runs to the west of the site.

### **Adjacent Land Uses:**

The surrounding area has supported various industrial and potentially contaminative land uses, including works and warehouses. No sensitive land uses have been identified.

### **Geology and Hydrogeology:**

The underlying geology of the site is London Clay, overlain by Hackney Gravels, overlain by Made Ground. The superficial aquifer is of variable permeability but the bedrock is of low permeability. The site is not near any designated source protection zones.

### **Site Investigation:**

A site investigation was undertaken prior to development which included 12 boreholes. The results of these were interpreted as part of the Phase I Environmental Audit.

### **Contaminated Land:**

There have been no historical contaminative uses of the site identified, although there is a historical landfill site located to the west (King George’s

Playing Fields). There are some potentially contaminative land uses adjacent to the site, including works and warehouses. The soil chemistry maps do not show any significant elevated concentrations of heavy metals.

**Flood:**

A flood risk assessment report produced by Elciem Ltd. considers the site to be in Flood Zone 1 and at a low risk of flooding. This is based on information provided by the Environment Agency and survey data which shows the site is at least 1.5m above the higher risk Flood Zones 2 and 3.

**Air Quality:**

Estimated background pollutant concentrations at the location of the proposed development are significant when compared to the AQS objectives. (Reference King George Close, Romford Local Air Quality Assessment.- Document 8.2 Air Quality Assessment). This shows that from the UK – Air tool for the location Annual Mean Background Concentration for NO<sub>2</sub> is slightly over half the AQS Objective levels, although UK-AIR tool also shows levels systematically falling from 2010 to 2018.

**Nuisance Emissions:**

No sources of nuisance have been identified from adjacent sites to the target site. A criteria has been placed on the planning consent of the site which states that at the 1<sup>st</sup> floor windows of the closest residential properties the noise level must not exceed 30dB (L<sub>Aeq</sub>). Various mitigation options have been adopted to meet this standard.

**Hazardous Materials:**

There are no major hazardous substances installations within 1 km of the study site.

**Radon:**

The site is not in an area requiring radon protection.

## 1.0 INTRODUCTION

### 1.1 Site Address

3 King George Close                      National Grid Reference: TQ 50290 89820.  
Eastern Avenue  
Romford  
RM7 7PN

### 1.2 Scope

In preparing this report we have exercised all reasonable skill, care and diligence considering the scope of the work agreed with Infinity and taking into account the information made available by the client and others. The desk top investigations were conducted in September 2013.

The desk-top scope included examination of environmental reports prepared for the planning application, as well as the following:

- Site Sensitivity Maps (including Context Maps)
- Geological Maps
- Environment Agency Flood vulnerability
- BGS Borehole Data
- Sensitive Land Uses
- Source Protection Zones
- Groundwater Vulnerability
- EA/BGS Aquifer Designations
- Insurance claims for flooding
- Soil maps
- Radon maps of London, Sussex and west Kent.

The references in this document are part of the EPR application; they are not duplicated as Appendices but are included as footnotes throughout.

The scope of this assessment did **not** include:

- Any intrusive surveys – drainage, services etc;
- Site sampling for contamination; and
- Utility searches.

However a full site investigation has been undertaken and reported prior to site works commencing<sup>1</sup>

### 1.3 Structure of the Report

Section 2.0 provides the Environmental Context of the site, Section 3.0 provides a statement of the Baseline Site Condition and Section 4.0 provides the conclusions of the report.

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<sup>1</sup> Environmental Permit Application: Section 8.4 Phase I Environmental Audit (CMP, 2007)

## 2.0 ENVIRONMENTAL CONTEXT

### 2.1 Site Location and Surrounding Area

The site is located adjacent to Hubbinet Industrial Estate in Romford. The site is surrounded by residential properties adjacent to the east and north and by commercial/industrial properties to the south and west.<sup>2</sup>

### 2.2 The Development

The data centre located on site is currently in operation. This has been progressively developed in various Phases – the installation of the diesel generators of the most recent Phase (Phase IV) has meant that the site now has a total thermal capacity ( including redundancy) is just in excess of the threshold for which a Permit is required.

The aggregated total input thermal capacity on a Gross CV basis is 59.36MWth although this is wholly stand-by plant. The threshold for permitting is 50MWth

The site has been developed in three phases which for historical reasons are denoted Phase III, Phase IV and Phase V. ( Phase I was the building envelope and Phase II was a proposed development that has never been built out).

Taking into account the redundancy on the site the site capacity is:

Phase	Redundancy	Operational Capacity ( MWth)	Installed Capacity (MWth)
III	2 DRUPS as 2N	4.95	9.91
IV	2 generators as 2N	6.72	13.46
V	5 generators as N+1	28.8	36.0
	Totals	40.47	59.36

### 2.3 EPR Permit Boundary

The EPR permit boundary is drawn around the diesel generators compounds and the external areas of the building which accommodate the diesel storage tanks (which are located underground). The boundary excludes the main part of the buildings which house the IT equipment.<sup>3</sup>

### 2.4 Environmental Context

The Site Sensitivity Map<sup>4</sup> shows there to be a historical landfill to the west of the site (King George's Playing Fields) as well as various Industrial Land Uses around the vicinity of the site, including the Works to the south/southeast.

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<sup>2</sup> Environmental Permit Application: Section 10.1 Development Plan

<sup>3</sup> Environmental Permit Application: Section 11.1 Permit Boundary and Emission Points

<sup>4</sup> Environmental Permit Application: Section 12.3 Site Sensitivity Context Maps

The Environment Agency register shows and that there have been numerous pollution incidents to controlled waters, i.e. the River Rom in close proximity to the site.

## **2.5 Residential**

The site is surrounded by residential properties to the north (on Linley Crescent) and to the east (on Hainault Road).

## **2.6 Planning**

Planning permission for the erection of the Data Centre was submitted on the 16<sup>th</sup> February 2007 and was granted on 10<sup>th</sup> August 2010.



### 3.0 SITE BASELINE CONDITION

#### 3.1 Site History

The development site is located on King George Close in the town of Romford in Essex. Historically this site was open land prior to the land being used as a Brick Works by 1920. This was demolished during the 1960s and by 1971 a warehouse was located on site. It has been used for industrial purposes since then.

#### 3.2 Geology and Hydrogeology

The findings of the Site Investigation indicate that the site is immediately underlain by Made Ground (varying from depths of 0 – 5m across the site). Beneath this is Hackney Gravels (a minor aquifer of variable permeability) underlain by a low permeable London Clay.<sup>5</sup>

#### 3.3 Contaminated Land

The soil contamination maps for the area show that heavy metal concentrations (arsenic, cadmium and nickel) are all significantly lower than the Soil Guideline Values for the corresponding land use. The chromium concentrations are estimated to be within 90 – 120 mg/kg and the lead concentrations are between 300 – 600 mg/kg.<sup>6</sup>

#### 3.4 Flood

The BGS Groundwater Vulnerability map shows the site is located on an area of Variably Permeable land therefore the site does have some risk of flooding from groundwater sources.<sup>7</sup> The Environment Agency's Historic Flood Map shows that in the past the River Rom has exceeded its channel capacity and the extent of the flooding reaches immediately to the west of site.<sup>8</sup> The Risk Management Solutions Flood Data Map show that the site is at risk of flooding during a 1 in 75 year event.<sup>9</sup>

Current information, including local borough flood maps and Environment Agency data show the site to be within Flood Zones 2 and 3. However a flood risk assessment report was produced by Elciem Ltd. which shows the site to be at a low risk of flooding. They consider the site to be located within Flood Zone 1, based on information provided by the Environment Agency and survey data provided by Zetica which indicates the site is at least 1.5m above Flood Zones 2 and 3.

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<sup>5</sup> Environmental Permit Application: Section 8.5 Phase I Environmental Audit (CMP, 2007)

<sup>6</sup> Environmental Permit Application: Section 12.6 Soil Geochemistry Maps

<sup>7</sup> Environmental Permit Application: Section 12.3 Site Sensitivity Context Maps (Groundwater Vulnerability)

<sup>8</sup> Environmental Permit Application: Section 12.4 Flood Maps (1:10000) (EA Historic Flood Maps)

<sup>9</sup> Environmental Permit Application: Section 12.4 Flood Maps (1:10000) (RMS 75year Flood Return Map)

### 3.5 **Air Quality**

There are no monitoring stations that are close to the development site or considered to be representative of the prevailing air quality at the site.

Estimates of annual average background pollutant concentrations of the grid square, in which the site is located, were downloaded from the Defra website.

The estimated background pollution concentrations for NO<sub>2</sub> and PM<sub>10</sub> are 27.63µg/m<sup>3</sup> and 19.84 µg/m<sup>3</sup>; both substantially lower than the short term Air Quality Strategy objectives, which are 200µg/m<sup>3</sup> for NO<sub>2</sub> and 50µg/m<sup>3</sup> for PM<sub>10</sub>.

### 3.6 **Landfill Gas Hazards**

King George's Playing Fields to the west of the site is a historical landfill site. It is not expected to pose any environmental risks as a result of landfill gas or leachate permeating from the site.

### 3.7 **Environmental Noise and Statutory Nuisance**

No sources of nuisance have been identified from adjacent sites to the target site.

Noise sensitive receptors in the vicinity of the Data Centres are considered to be the residential properties to the north and east of the site. Existing background noise levels at the site are low, with the lowest measured noise levels recorded close to the residential premises at night being 35dB (L<sub>A90</sub>).

A criteria has been placed on the planning consent of the site which states that at the 1<sup>st</sup> floor windows of the closest residential properties the noise level must not exceed 30dB (L<sub>Aeq</sub>). Various mitigation options have been adopted to meet this standard.<sup>10</sup>

### 3.8 **Hazardous Materials and Environmentally Hazardous Materials**

There are no major hazardous substances installations within 1 km of the study site.

### 3.9 **Radon**

The site is not in an area requiring radon protection.

### 3.10 **Waste Management**

No waste deposits were observed on the study site.

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<sup>10</sup> Environmental Permit Application: Section 8.3 Acoustic Report (Sharps Redmore Partnership, 2010)

### 3.11

#### **Site Sensitivity**

There is an area of Adopted Greenbelt within 1km of the site, to the west. There are no other sensitive land uses within 1km of the study site.

We have however undertake Air Quality Assessments for the SSSI's at:

Hainault Forest  
Curtismill Green  
Thorndon Park  
Hornchurch Cutting  
Ingrebourne Marshes  
Epping Forest  
Roding Valey Meadows

Document 8.2 Quality Assessment. This note that the existing background annual NO<sub>x</sub> concentrations are an exceedence of the AQ objective however the nitrogen deposition rates are well below the critical loads. The report also notes that that the expected deposition represents around 0.08% of the critical load. This is well below the threshold of 1% of the critical load at which concentrations are considered significant.

## **4.0 CONCLUSIONS**

A number of environmental reports and investigations have been undertaken as a desk top study to support the Site Baseline Report as part of the site investigation and planning application process.

In this report we have reviewed the available reports and provided an overview of the Environmental Context and a Site Baseline Statement to meet the requirements of H5 Site Condition Report for the EPR permit application.